

CLAIM AMENDMENTS

Claim Amendment Summary

Claims pending

- Before this Amendment: Claims 1-8, 10-18, 20-28, and 30.
- After this Amendment: Claims 1, 3, 5-7, 10-11, 13, 15-17, 20-21, 23, 25-27, and 30-33.

Non-Elected, Canceled, or Withdrawn claims: 2, 4, 8-9, 12, 14, 18-19, 22, 24, and 28-29.

Amended claims: 1, 3, 5-7, 11, 13, 15-17, 21, 23, 25-27, and 30.

New claims: 31-33.

Claims:

1. **(Currently amended):** A method for handling a large data object in a database system implemented in a computer system, said method comprising:

creating a handling structure comprising at least a reference to locate the large data object stored in the database system and information to return an interface to provide access to the large data object in the database system , ~~wherein said handling structure has a lifetime, and said handling structure comprising a field having a value corresponding to said lifetime;~~

~~wherein said handling structure can be processed by said partial update of the large data object referenced by the handling structure is processed without incurring substantial negative impact on overall performance of the database system computer system, via functions, operations, and so forth available for a small data object, with which said large data object could not be so processed.~~

2. (Cancelled).

3. (Currently amended): The method of claim [[2]] 1 wherein the partial update of the large data object comprises replacing only a portion of the large data object without updating the large data object in its entirety ,~~if said first handling structure must write a change to said first large data object, said first large data object is copied to a second large data object and said second handling structure is pointed to said second large data object prior to the first handling structure writing the change to the first large data object.~~

4. (Cancelled).

5. (Currently amended): The method of claim 1 wherein a data object having a type from ~~among the~~ a group of types ~~comprising~~ consisting of text, ntext, and image data types is converted into a large data object with a corresponding handling structure.

6. (Currently amended): The method of claim 1 wherein a data object having a type from ~~among the~~ a first group of types ~~comprising~~ consisting of text, ntext, and image data type is converted into a data object having a type from ~~among the~~ a second group of types ~~comprising~~ consisting of varchar(MAX), nvarchar(MAX), ~~[[or]]~~ and varbinary(MAX) data types respectively, ~~the wherein~~ varchar(MAX), nvarchar(MAX), and varbinary(MAX) data types each comprising ~~comprise~~ a handling structure and ~~[[the]]~~ a MAX corresponds corresponding to a predetermined maximum size value.

7. (Currently amended): The method of claim 1 wherein the reference of said handling structure is configured to point to a small value data object within the handling structure itself provided that ~~corresponds to a small value data object,~~ and said small value data object is stored entirely within ~~[[the]]~~ said handling structure.

8-9. (Cancelled).

10. (Original): The method of claim 1 wherein said handling structure is created by a handling structure factory in response to a need for a handling structure.

11. (Currently amended): A system for handling a large data object in a database system implemented in a computer system, said method comprising:

a subsystem for creating a handling structure comprising at least a reference to locate the large data object stored in the database system and information to return an interface to provide access to the large data object in the database system , ~~wherein said handling structure has a lifetime, and said handling structure comprising a field having a value corresponding to said lifetime;~~

~~wherein said handling structure can be processed by said partial update of the large data object referenced by the handling structure is processed without incurring substantial negative impact on overall performance of the database system computer system, via functions, operations, and so forth available for a small data object, with which said large data object could not be so processed.~~

12. (Cancelled).

13. (Currently amended): The system of claim [[12]] 11 wherein the partial update of the large data object comprises replacing only a portion of the large data object without updating the large data object in its entirety, ~~if said first handling structure must write a change to said first large data object, said first large data object is copied to a second large data object and said second handling structure is pointed to said second large data object prior to the first handling structure writing the change to the first large data object.~~

14. (Cancelled).

15. (Currently amended): The system of claim 11 wherein a data object having a type from ~~among the~~ a group of types ~~comprising~~ consisting of text, ntext, and image data types is converted into a large data object with a corresponding handling structure.

16. (Currently amended): The system of claim 11 wherein a data object having a type from ~~among the~~ a first group of types ~~comprising~~ consisting of text, ntext, and image data type is converted into a data object having a type from ~~among the~~ a second group of types ~~comprising~~ consisting of varchar(MAX), nvarchar(MAX),

and varbinary(MAX) data types respectively, ~~the wherein~~ varchar(MAX), nvarchar(MAX), and varbinary(MAX) data types each comprising ~~comprise~~ a handling structure and ~~[[the]] a MAX corresponds~~ corresponding to a predetermined maximum size value.

17. **(Currently amended):** The system of claim 11 wherein the reference of said handling structure is configured to point to a small value data object within the handling structure itself provided that ~~corresponds to a small value data object,~~ and said small value data object is stored entirely within the said handling structure.

18-19. **(Cancelled).**

20. **(Original):** The system of claim 11 wherein said handling structure is created by a handling structure factory in response to a need for a handling structure.

21. **(Currently amended):** A computer-readable medium comprising computer-readable instructions for handling a large data object in a database system implemented in a computer system, said computer-readable instructions comprising instructions for:

creating a handling structure comprising at least a reference to locate the large data object stored in the database system and information to return an interface to provide access to the large data object in the database system, wherein partial update of the large data object referenced by the handling structure is processed without incurring substantial negative impact on overall performance of the database system and ~~processing said handling structure with functions, operations, and such other manipulations available for a small data object, with which said large data object could not be so processed, whereby said handling structure has a lifetime, and said handling structure comprising a field having a value corresponding to said lifetime.~~

22. (Cancelled).

23. (Currently amended): The computer-readable instructions of claim ~~[[2]]~~ 21, wherein the partial update of the large data object comprises replacing only a portion of the large data object without updating the large data object in its entirety ~~further comprising instructions whereby, if said first handling structure must write a change to said first large data object, said first large data object is copied to a second large data object and said second handling structure is pointed to said second large data object prior to the first handling structure writing the change to the first large data object.~~

24. (Cancelled).

25. (Currently amended): The computer-readable instructions of claim [[1]] 21 further comprising instructions whereby for:

converting into a large data object with a corresponding handling structure, a
data object having a type from ~~among the~~ a group of types ~~comprising~~ consisting of
text, ntext, and image data types ~~is converted into a large data object with a~~
~~corresponding handling structure.~~

26. (Currently amended): The computer-readable instructions of claim 21
further comprising instructions whereby for converting a data object into a large data
object, wherein:

in an event that the data object is of a type, text, the data object is converted
into a large data object of a type varchar(MAX);

in an event that the data object is of a type, ntext, the data object is converted
into a large data object of a type nvarchar(MAX); and

in an event that the data object is of a type, image, the data object is converted into a large data object of a type varbinary(MAX).

wherein the varchar(MAX), nvarchar(MAX), and varbinary(MAX) data types each comprise a handling structure type and a MAX value corresponding to a predetermined maximum size value

~~a data object having a type from among the group of types comprising text, ntext, and image data type is converted into a data object having a type from among the group of types comprising varchar(MAX), nvarchar(MAX), and varbinary(MAX) respectively, said varchar(MAX), nvarchar(MAX), and varbinary(MAX) types, comprising a handling structure type, and a MAX value corresponds to a predetermined maximum size value.~~

27. (Currently amended): The computer-readable instructions of claim ~~[[1]]~~ 21, ~~further comprising instructions whereby~~ wherein the reference of said handling structure is configured to point to a small value data object within the handling structure itself provided that ~~, if said handling structure corresponds to a small value data object,~~ said small value data object is stored entirely within ~~[[the]]~~ said handling structure.

28-29. (Cancelled).

30. (Currently amended): The computer-readable instructions of claim [[1]]
21, wherein further comprising instructions whereby said handling structure is created by
a handling structure factory in response to a need for a handling structure.

31. (New) The method of claim 1 wherein said handling structure has a
lifetime indicative of a length of time during which said handling structure is valid, and said
handling structure further comprises a field having a value corresponding to said lifetime.

32. (New) The system of claim 11 wherein said handling structure has a
lifetime indicative of a length of time during which said handling structure is valid, and said
handling structure further comprises a field having a value corresponding to said lifetime.

33. (New) The computer-readable instructions of claim 21, wherein said
handling structure has a lifetime indicative of a length of time during which said handling
structure is valid, and said handling structure further comprises a field having a value
corresponding to said lifetime.